

REMARKS/ARGUMENTS

The Office Action mailed November 26, 2008 has been received and the Examiner's comments carefully reviewed. The Office Action rejected claims 1-64. Claims 1, 13, 19, 28, 34, 39, 40, 50, and 51 have been amended. No new matter has been added. For at least the following reasons, Applicants respectfully submit that the presently pending claims are in condition for allowance.

Interview March 11th 2009

Applicants thank Examiner Anya for the courtesy of the telephone conference on March 11th, 2009. The independent claims as amended were discussed with regard to Skinner, Arnold and Kadyk. Specifically, that the cited references do not teach scanning for events related to shared files from a file system manager, determining a notification bond to be missing by comparing a client aggregate bond number with the server aggregate bond number or use of an offset location within a notification log. The Examiner indicated that the amendments would further the prosecution of this matter.

Claim Rejections

Claims 1-32, 34-38 and 40-49 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Pat. No. 6,721,740 B1 to Skinner et al. in view of U.S. Pat. No. 6,263,360 B1 to Arnold et al. Claims 33 and 51-64 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Pat. No. 6,721,740 B1 to Skinner et al. in view of U.S. Pat. No. 6,263,360 B1 to Arnold et al., as applied to claim 28 above and further in view of U.S. Pub. No. 2003/0051068 A1 to Eldridge et al. Claim 39 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Pat. No. 6,721,740 B1 to Skinner et al. in view of U.S. Pat. No. 6,263,360 B1 to Arnold et al., as applied

to claims 1,40 or 51 above and further in view of U.S. Pat. No. 6,941,326 B2 to Kadyk et al.

Claim 50 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Pat. No. 6,721,740 B1 to Skinner et al. in view of U.S. Pat. No. 7,099,926 B1 to Ims et al. Applicants respectfully disagree but have amended the claims, without disclaimer, to more clearly define the invention.

As amended, Claim 1 recites in part:

- . . . creating a bond manager on the server, the bond manager including:
 - a filter component configured to scan for incoming and outgoing events related to shared files from a file system manager of the server and forward the events to a service component; and
 - the service component configured to receive events from the filter component and establish notification bonds with the client, the service component maintaining a server bond table, wherein the server bond table includes a server identifier, a server aggregate bond number, and a notification log offset identifying a location within the notification log;
- establishing a notification bond associated with a particular object with the server, the notification bond enabling the client to obtain a notification from the bond manager on the server in response to an object related event associated with the original object; wherein the notification bond remains persistent through a reboot of the client and server and the object related event is associated with an edit of the original object, the notification bond established after determining the notification bond to be missing by comparing a client aggregate bond number with the server aggregate bond number; and wherein each object is associated with a different notification bond; and . . .

In contrast, the cited references do not teach scanning for events related to shared files from a file system manager, determining a notification bond to be missing by comparing a client aggregate bond number with the server aggregate bond number or use of an offset location within a notification log.

The cited references do not teach scanning for events related to shared files from a file system manager. The Office Action mapped events from a file system manager to Skinner's "application server." (Office Action, pg. 8.) Skinner's "application server" is directed towards

monitoring changes in “data objects” in a database, and not shared files in a file system manager.

For example, Fig. 9 depicts the interaction between the application server 307 and a database

311:

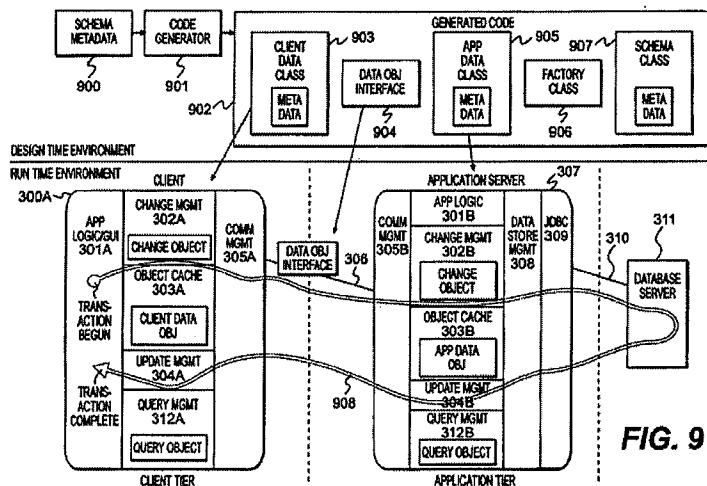


FIG. 9

Skinner, Fig. 9. In Skinner, application components on an application server detect changes to **data objects** that are of interest to other objects:

The interest object specifies the interested application component, as well as the identity of one or more **data objects or an attribute value or range of values to associate with data objects**. When modifications are made to data objects corresponding to the registered interest objects, the interested application component or components receive an update notification from the update management component.

Skinner, Col. 2:55-65. Skinner’s **modifications to one or more data objects** are not equivalent to scanning events related to **shared files from a file system**.

Additionally, the cited references do not teach a notification bond established after determining the notification bond to be missing by comparing a client aggregate bond number with the server aggregate bond number. Skinner does not teach establishing a persistent notification bond. (Office Action, pg. 3.) The Office Action mapped a persistent notification bond to Arnold. (Office Action, pg. 3; Arnold Col. 6:20-43, Col. 16:55-67, Col. 17:1-6.)

Arnold, however, does not teach establishing a notification bond after a comparison of a client aggregate bond number to a server aggregate bond number. Accordingly, Arnold's description of *re-establishment of links* does not encompass *comparing a client aggregate bond number to a server aggregate bond number*.

Further, the cited references do not teach a server bond table including a notification log offset identifying a location within a notification log. In rejecting the now-amended claim 39, the Office Action stated that Arnold and Skinner do not disclose a notification log offset. (Office Action, pg. 22.) The notification log offset was mapped to Kadyk's "token." (Kadyk, Col. 9:6-63.) Kadyk discloses a "token" that "maintains an association between tokens 244 and data 242." (Kadyk, Col. 9:36-39.) In Kadyk, the token is used to lookup data to be sent. An association, however, does not identify an offset location within a log file. An association allows data to be retrieved, in a database, using the token. The token may be an index, a pointer to an index, or any other mechanism within a relational database. The log offset, in contrast, identifies a location within the notification log. As such, Kadyk's *tokens that are associated with data* are not equivalent to an *offset location within a notification log*.

For at least the reasons presented above, Claim 1 is proposed to be allowable. Claims 2-12 are proposed to be allowable as they depend from a valid base claim.

As amended, Claim 13 recites in part:

- . . . creating a bond manager on the server, the bond manager including:
 - a filter component configured to scan for incoming and outgoing events related to shared files from a file system manager of the server and forward the events to a service component; and
 - the service component configured to receive events from the filter component and establish notification bonds with the client, the service component

maintaining a server bond table, wherein the server bond table includes a server identifier, a server aggregate bond number, and a notification log offset identifying a location within the notification log;

- establishing a notification bond associated with a particular object with the client, the notification bond enabling the client to obtain a notification from the server in response to an object related event associated with an object; wherein the notification bond associated with a particular object remains persistent through a reboot and the object related event is associated with an edit of the original object, the notification bond established after determining the notification bond to be missing by comparing a client aggregate bond number with the server aggregate bond number;

For at least the reasons presented above, Claim 13 is proposed to be allowable. Claims 14-18 are proposed to be allowable as they depend from a valid base claim.

As amended, Claim 19 recites in part:

- . . . a server that includes a processor and storage medium encoded with instructions to manage original objects, the server including a bond manager configured to issue notification bonds to clients, the bond manager comprising:
 - a filter component configured to scan for incoming and outgoing events related to shared files from a file system manager of the server and forward the events to a service component; and
 - the service component configured to receive events from the filter component and establish notification bonds with the client, the service component maintaining a server bond table, wherein the server bond table includes a server identifier, a server aggregate bond number, and a notification log offset identifying a location within the notification log;
- and each notification bond being associated with a particular original object and enabling a client to obtain a notification from the server in response to an object related event associated with the particular original object in which the notification bond is associated; wherein the notification bond associated with the particular objects object remains persistent through a reboot and the object related event is associated with an edit of the original object.

For at least the reasons presented above, Claim 19 is proposed to be allowable. Claims 20-27 are proposed to be allowable as they depend from a valid base claim.

As amended, Claim 28 recites in part:

- . . . a first indexing data field containing object identifiers, each object identifier uniquely identifying an object that is managed by a server; and
- a second data field containing entries, . . . , the notification bond established after determining the notification bond to be missing by comparing a client aggregate bond number with a server aggregate bond number.

For at least the reasons presented above, Claim 28 is proposed to be allowable. Claims 29-33 are proposed to be allowable as they depend from a valid base claim.

As amended, Claim 34 recites in part:

- . . . a first indexing data field containing server identifiers, each server identifier uniquely identifying a server that manages an original object, the original object being cached by a client; and
- a second data field containing entries, . . . , the notification bond established after determining the notification bond to be missing by comparing a client aggregate bond number with a server aggregate bond number.

For at least the reasons presented above, Claim 34 is proposed to be allowable. Claims 35-39 are proposed to be allowable as they depend from a valid base claim.

As amended, Claim 40 recites in part:

- . . . means for a client to cache an original object managed by a server; wherein the client includes means for interacting with a plurality of cached objects that are created on the client from objects managed by the server and
- means for establishing a notification bond associated with a particular original object with the server and the client, the notification bond enabling the client to obtain a notification from the server in response to an object related event associated with the particular original object in which the notification bond is associated; wherein the notification bond remains persistent through a reboot, the notification bond established after determining the notification bond to be missing by comparing a client aggregate bond number with a server aggregate bond number and the object related event is associated with an edit of the original object; and
- updating each of the cached objects with the original objects after a change is made to the original object.

For at least the reasons presented above, Claim 40 is proposed to be allowable. Claims 41-49 are proposed to be allowable as they depend from a valid base claim.

As amended, Claim 50 recites in part:

- . . . creating cached objects from original objects;
- establishing a plurality of notification bonds, each associated with a particular one of the cached objects, between the server and the computer, the notification bonds enabling the client to obtain a notification from the server in response to an object related event associated with the original object in which the notification bond is associated; wherein the plurality of notification bonds between the server and the computer that are associated with one of the cached objects each remain persistent through a reboot of the client and server and the object related event is associated with an edit of the original object; and wherein each object includes is associated with a different one of the plurality of notification bonds;
- reestablishing a communication link between the client and the server after a period of time without a communication link;
- determining at least one notification bond is missing by comparing a client aggregate bond number with a server aggregate bond number;
- re-establishing the at least one notification bond; . . .

For at least the reasons presented above, Claim 50 is proposed to be allowable.

As amended, Claim 51 recites in part:

- creating cached objects from original objects;
- establishing a notification bond associated with one of the original objects with the server for each of the cached objects, . . .
- determining the notification bond is missing by comparing a client aggregate bond number with a server aggregate bond number, . . .
- persistently maintaining, by the server, a server identifier, a server aggregate bond number, a notification log offset identifying a location within the notification log, and server bond states related to the original objects; the server bond states corresponding to the notification bonds associated with the original objects, each notification bond enabling the client to obtain a notification from the server when at least one of the original object has been modified such that a copy of the original object may be

synchronized and maintained on the client after the object has been edited by a user associated with the server; and

- persistently maintaining, by the client, client bond states corresponding to the server bond states.

For at least the reasons presented above, Claim 51 is proposed to be allowable. Claims 52-64 are proposed to be allowable as they depend from a valid base claim.

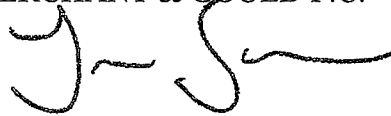
Conclusion

In view of the foregoing amendments and remarks, all pending claims are believed to be allowable and the application is in condition for allowance. Therefore, a Notice of Allowance is respectfully requested. Should the Examiner have any further issues regarding this application, the Examiner is requested to contact the undersigned attorney for the applicants at the telephone number provided below.

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Respectfully submitted,

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